

ABSTRACT

A method and apparatus are disclosed for increasing contrast in micromirror-based image display devices. As a result the displayed image is a more faithful reproduction of the original and is more pleasing to human perception than is possible with a low contrast display. The method and apparatus comprise a micromirror design and a modulation scheme for driving micromirrors with a combination of analog and digital techniques to achieve partial and full micromirror deflection. The analog techniques permit the mirrors to be deflected to positions intermediate between the resting position and the position of maximum deflection. These intermediate deflections appear as intermediate light levels in an image. Compared to digital modulation, the analog techniques provide an increase in the number of light levels that can be displayed by a system that is limited by its incoming data rate and maximum micromirror speed.